

CLAIMS

- 1 1. An optical structure comprising:
 - 2 a substrate having a surface; and
 - 3 a modified barium titanate deposited on said surface of said substrate.
- 1 2. The structure of claim 1, wherein the stabilized barium titanate comprises barium titanate including 2 to 20 mol% of Zr (BaZrO_3).
- 1 3. The structure of claim 1, wherein the stabilized barium titanate comprises barium titanate including 2 to 20 mol% of Hf (BaHfO_3).
- 1 4. The structure of claim 1, wherein the stabilized barium titanate comprises barium titanate including 2 to 12 mol% potassium niobate (KNbO_3).
- 1 5. The structure of claim 1, wherein the stabilized barium titanate comprises a barium titanate including 4 to 14 mol% Sn (BaSnO_3).
- 1 6. The structure of claims 1, 2, 3, 4, or 5, wherein said substrate comprises Si or SOI with an optical buffer layer.
- 1 7. The structure of claim 6, wherein said optical buffer layer comprises MgO , YSZ , CeO_2 , SiO_2 , or a combination thereof.
- 1 8. The structure of claims 1, 2, 3, 4, or 5, further comprising electrodes on a surface of the stabilized barium titanate configured to form an electro-optic structure.
- 1 9. A method of forming an optical structure comprising:
 - 2 providing a substrate having a surface; and

3 depositing modified barium titanate on said surface of said substrate.

1 10. The method of claim 9, wherein the stabilized barium titanate comprises barium
2 titanate including 2 to 20 mol% of Zr (BaZrO₃).

1 11. The method of claim 9, wherein the stabilized barium titanate comprises barium
2 titanate including 2 to 20 mol% of Hf (BaHfO₃).

1 12. The method of claim 9, wherein the stabilized barium titanate comprises barium
2 titanate including 2 to 12 mol% potassium niobate (KNbO₃).

1 13. The method of claim 9, wherein the stabilized barium titanate comprises a barium
2 titanate including 4 to 14 mol% Sn (BaSnO₃).

1 14. The method of claim 9, 10, 11, 12, or 13 further comprising placing electrodes on a
2 surface of the stabilized barium titanate configured to form an electro-optic structure.

1 15. The method of claim 9, 10, 11, 12, or 13, wherein said substrate comprises Si or SOI
2 with an optical buffer layer.

1 16. The method of claim 9, wherein said optical buffer layer comprises any of MgO,
2 YSZ, CeO₂, SiO₂, or a combination thereof.